UNIVERSITY of GUYANA

FACULTY OF NATURAL SCIENCES

DEPARTMENT OF COMPUTER SCIENCE

CSE1200 – INTRODUCTION TO COMPUTING II

LAB/TUTORIAL – TRUTH TABLES

Type of lab/tutorial Exercise: Discussion & practice

1. Make a truth table for the given expressions:
   (a) (~p∧q) ∨ (p∧~q)
   (b) (p∧~q) ∨ r
   (c) ~[(p∧~q) ∨ ~p]

(a) (~p∧q) ∨ (p∧~q)

p	q	~p	~q	~p ∧ q	p ∧ ~q	(~p∧q)∨(p∧~q)
T	T	F	F	F	F	F
T	F	F	T	F	T	T
F	T	T	F	T	F	T
F	F	T	T	F	F	F

(b) (p∧~q) ∨ r

p	**q**	**r**	**∼q**	**p ∧ ~q**	**(p ∧ ~q) ∨ r**
T	T	T	F	F	T
T	T	F	F	F	F
T	F	T	T	T	T
T	F	F	T	T	T
F	T	T	F	F	T
F	T	F	F	F	F
F	F	T	T	F	T
F	F	F	T	F	F

(c) ~[(p∧~q) ∨ ~p]

p	**q**	**∼p**	**∼q**	**p ∧ ~q**	**(p ∧ ~q) ∨ ~p**	**∼[(p ∧ ~q) ∨ ~p]**
T	T	F	F	F	F	T
T	F	T	T	T	T	F
F	T	T	F	F	T	F
F	F	T	T	F	T	F

2. Suppose p is the statement, '*You need a credit card*' and q is the statement, '*I have a nickel*.'

Select the correct statement corresponding to **~(pvq)**.

(a) You do not need a credit card and I have a nickel. true
~~(b)~~ It is not the case that either you need a credit card or I have a nickel.
(c) You do not need a credit card or I have a nickel.
(d) None of these.

3. Select the statement that is the **negation** of 'The speed limit is 55 and John is driving at 35.'
~~(a)~~ The speed limit is not 55 or John is not driving 35.
(b) The speed limit is not 55 and John is not driving 35.
(c) The speed limit is not 35 or John is driving at 35.
(d) The speed limit is not 55 and John is driving 35

4. Select the statement that is the **negation** of '*Some weasels are cuddly.'*
~~(a)~~ No weasels are cuddly.
(b) All weasels are cuddly.
(c) Some weasels are not cuddly.
(d) All cuttlefish are weasely.

5. Select the statement that is the **negation** of '*Coach Spurrier is charming and Coach Spurrier is modest.'*
(a) Coach Spurrier is not charming and Coach Spurrier is not modest. (b)
~~(b)~~ Coach Spurrier is not charming or Coach Spurrier is not modest.
(c) Coach Spurrier is not charming and Coach Spurrier is modest.
(d) Let's get serious for a minute